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Abstract of the Disclosure

A method of position-based integrated motion controlled curve sawing includes the steps of: transporting a curved workpiece in a downstream direction on a transfer, and monitoring position of the workpiece on the transfer, scanning the workpiece through an upstream scanner to measure workpiece profiles in spaced apart array, along a surface of the workpiece and communicating the workpiece profiles to a digital processor, computing by the digital processor, a high order polynomial smoothing curve fitted to the array of workpiece profiles of the curved workpiece, and adjusting the smoothing curve for cutting machine constraints of downstream motion controlled cutting devices to generate an adjusted curve generating unique position cams unique to the workpiece from the adjusted curve for optimized cutting by the cutting devices along a tool path corresponding to the position cams, sequencing the transfer and the workpiece with the cutting devices, and sequencing the unique position cams corresponding to the workpiece to match the position of the workpiece feeding the workpiece, on the transfer, longitudinally into cutting engagement with the cutting devices, and actively relatively positioning the workpiece and the cutting devices relative to each other according to a time-based servo loop updated recalculation, based on said workpiece position, of cutting engagement target position as the workpiece is fed longitudinally so as to position the cutting engagement of the cutting devices along the tool path.

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